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EXAMINER

HOANG, HIEU T

ART UNIT PAPER NUMBER

2196

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/679,445

Applicant(s)

PARK, SOO-HONG

Examiner

Hieu T. Hoang

Art Unit

2196

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08) | 5) ☐ Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

DETAILED ACTION

1. Claims 1-42 are pending in this application. Claims 1-22 are canceled. Claims 23-42 are added by amendment filed on 02/08/2005. Claims 28-42 are presented for examination.

Drawings

2. Figures 1, 2, and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: the foreign priority claim statement (paragraph [01]) is not necessary and should be deleted. Foreign priority has already been claimed in the Declaration filed on 10/07/2003 and has been acknowledged by examiner in the process of examination.

Claim Objections

4. Claim 30 recites the limitation "the host" on lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim. For examining purpose, "the host" will be treated as "the first host."

5. Claim 31 recites the limitations "the address" and "the domain name" on line 3, and "the domain name" and "the host" on line 5. There is insufficient antecedent basis for these limitations in the claim. For examining purpose, "the address" and "the domain name" on line 3 will be treated as "the second address" and "the second domain name"; "the domain name" and "the host" on line 5 will be treated as "the first domain name host" and "the first host."

6. Claim 32 recites the limitations "the third message" on line 1 and "the domain name" on line 4. There is insufficient antecedent basis for these limitations in the claim. It seems that "the third message" refers to "a message" on line 5 of claim 31. For examining purpose, "a message" in claim 31 will be treated as "a third message"; and "the domain name" will be treated as "the first domain name."

7. Appropriate correction is required.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 23-25, 27-28, 31-34, 36-37, and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura (Domain Name Auto-Registration for Plugged-in IPv6 Nodes, <http://tools.ietf.org/html/draft-ietf-dnsext-ipv6-name-auto-reg-00.txt>, dated 12/02/2002) in view of Borella (US 2003/0229697).

10. For claim 23, Kitamura discloses a method of registering an address and a domain name, the method comprising:

(a) receiving a first message including a first address of a first host (figure 3 on page 14 step (i), page 15 paragraph 8) and another first message including a first domain name of a first host from the first host (figure 3 on page 14 step (m), page 16 paragraph 4);
(b) determining whether there is a second host with at least one of a second address and a second domain name duplicative with at least one of the first address and the second domain name included in the received messages (figure 3 on page 14 step (i),

page 15 paragraph 8 for IP address supplication detection; figure 3 on page 14 step (m), page 16 paragraph 4 for domain name duplication detection); and (c) registering the first address and the first domain name included in the first messages as an address and a domain name of the first host, according to a determined result (figure 3 on page 14 steps (o), (p), (q), and (r), page 16 paragraph 6).

Kitamura does not disclose a first message that contains both the first address and domain name.

However, Borella discloses a message that contains both the first address and domain name of the first host ([0045] lines 1-9).

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Kitamura with the teachings of Borella in order to implement a message that contains both IP address and domain name of a host, hence to register both domain name and IP address of a host at the same time to reduce network traffic accessing the DNS server unnecessarily.

11. For claim 33, Kitamura shows and discloses a method allowing a host to request registration of an address and a domain name of the host, comprising:

(a) transmitting messages including the address (figure 3 on page 14 step (i), page 15 paragraph 8) and another message including the domain name of the host (figure 3 on page 14 step (m), page 16 paragraph 4), thus requesting the registration;

(b) receiving response messages for the request according to whether at least one of the address and domain name of the host is duplicative (figure 3 on page 14 step (j),

page 15 paragraph 8 for IP address duplication detection response; figure 3 on page 14 step (n), page 16 paragraph 4 for domain name duplication detection response); and (c) changing the at least one of the address and the domain name of the host according to whether or not the response message is received (figure 3 on page 14 steps (p), page 16 paragraph 5, if the domain name already exists in the DNS server, the registrar receives a message (j) then repeats the process of preparing or changing the domain name and attempts to register this 'changed' domain name).

Kitamura does not disclose a message or a response message that contains both the address and domain name.

However, Borella discloses a message that contains both the first address and domain name of the first host ([0045] lines 1-9).

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Kitamura with the teachings of Borella in order to implement a message that contains both IP address and domain name of a host, hence to register both domain name and IP address of a host at the same time to reduce network traffic accessing the DNS server unnecessarily.

12. For claim 24, Kitamura further discloses:

if the second host does not exist on the network, storing the first address and the first domain name included in the received message in a predetermined area, thereby registering the address and the domain name included in the received message (page 16 paragraph 6, it is inherent that registering both regular and inverse domain name

information to the DNS server means storing the IP address and the corresponding domain name in the DNS server file zone).

13. For claim 25, Kitamura further discloses the method is performed by a DNS (Domain Name Server) if the DNS exists (figure 3 on page 14 DNS server), and wherein the predetermined area is a DNS file area (page 16 paragraph 6, it is inherent that regular and inverse domain name information is in DNS file zone).

14. For claim 27, Kitamura further discloses the first address is an IPv6 (IP version 6) address and the first message is a message requiring a DAD (Duplicate Address Detection) (page 14 paragraph 3, figure 3 on page 14 plugged-in IPv6 node, steps (a), (b), (f), and (g) for DAD messages).

15. For claim 28, Kitamura and Borella further disclose the first message includes: a target address field storing the first address of the host (Kitamura page 15 paragraph 8, detected address is read as host's address; page 10 paragraph 4); and an option field (Borella [0045] lines 1-9, the portion of DNS update message that stores the domain name of the server is read as option field) storing the first domain name of the host (Kitamura figure 3 on page 14 step (m), default domain name is the first domain name of the host).

16. For claim 31, Kitamura further discloses:

- (d) in operation (b), if it is determined that the second host exists, determining which of the second address and the second domain name is duplicative (figure 3 on page 14 step (i) determines if IP address is duplicative; step (m) determines if domain name is duplicative; it is inherent that since IP address and domain name are in the same message according to claim 1, it has to be determined which of the IP address and the domain name is duplicative because neither one of the IP address nor domain name can be already used by another host registered to the DNS server); and
- (e) in operation (d), if it is determined that the second domain name duplicative, transmitting a third message requiring a change of the first domain name to the first host (figure 3 on page 14 step (n), page 16 paragraph 5, after domain name in message (m) is verified as already in existence—or duplicative, message (n) will be transmitted to the registrar to require a change of domain name).

17. For claim 32, Kitamura further discloses the third message includes:

- a target address field storing the first address of the first host (figure 3 on page 14 step (n) can contain information in step (i) including the address of the first host);
- an option field storing the first domain name of the first host (page 16 paragraph 5, figure 3 on page 14 step (n), the Registrar receives information of existent duplicative domain name and then restarts preparing another domain name, therefore, the (n) message may contain the duplicative domain name); and

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- a flag storing a predetermined value to change the first domain name (page 12 paragraph 2, the number of Dynamic Update messages sent from the Registrar is restricted; therefore, there has to be a counter or a flag for storing a predetermined value to change the domain name so that if the predetermined value is reached, domain name updating will stop).

18. For claim 34, Kitamura further discloses:

(d) transmitting a message including at least one of a changed address and a changed domain name, thus requesting the registration (page 16 paragraph 5, if the domain name already exists in the DNS server, the registrar restarts and repeats the process of preparing or changing the domain name and attempts to register this 'changed' domain name).

19. For claim 36, the claim is rejected for the same rationale as claim 27.

20. For claim 37, the claim is rejected for the same rationale as claim 28.

21. For claim 40, Kitamura further discloses: in operation (c), if a first response message requesting a change of the domain name is received in operation (b), the domain name of the host is changed (page 16 paragraph 5, the domain name of the host will be changed if the response message (n) indicates that there is another host using that same domain name).

22. For claim 41, the claim is rejected for the same rationale as claim 32.

23. For claim 42, Kitamura further discloses a computer-readable medium having embodied thereon a computer program for executing the method of any one of claims 23 through 41 (figure 1 and 2, DNS server, detector, and registrar must contain some computer-readable medium (e.g. hard drives), in order to execute the method of any one of claims 23 through 41).

24. Claims 29-30 and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura in view of Borella and further in view of Narten et al. (Neighbor Discovery for IP Version 6 (IPv6), RFC 2461, <http://www.ietf.org/rfc/rfc2461.txt>, dated 12/1998, hereafter Narten)

25. For claim 29, Kitamura further discloses:

(d) in operation (b), if it is determined that the second host exists, determining which of the second address and the second domain name is duplicative (figure 3 on page 14 step (i) determines if IP address is duplicative; step (m) determines if domain name is duplicative); and

Kitamura does not disclose:

(e) in operation (d), if it is determined that the second address is duplicative, transmitting a second message requiring a change of the first address, to the first host

However, in the art of Neighbor Discovery, Narten discloses:

(e) in operation (d), if it is determined that the second address is duplicative, transmitting a second message requiring a change of the first address, to the first host (page 22 section 4.4 Neighbor Advertisement Message Format figure, paragraph 1, page 23 Target Address, a node sends a neighbor advertisement message in response to the Neighbor Solicitations; neighbor advertisement message may contain the duplicative address or the address of the host in the target address field)

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Kitamura and Borella with the teachings of Narten in order to send a reply message to notify the host whether address duplication has been detected to automatically generate another address and attempt to register it again without human intervention.

26. For claim 30, the claim is rejected for the same reason as claim 29 above.

Moreover, Narten further discloses the second message includes:

- a target address field storing the address of the first host (page 22 Neighbor Advertisement Message Format figure, page 23 target address); and
- an option field storing a MAC address of the first host (page 24 Possible options, Neighbor Advertisement message may include link-layer address of the host in the options field).

27. For claim 38, Kitamura and Borella do not disclose in operation (c), if a first response message requesting a change of the address is received in operation (b), the address of the host is changed.

However, Narten discloses in operation (c), if a first response message requesting a change of the address is received in operation (b), the address of the host is changed (page 22 section 4.4 Neighbor Advertisement Message Format figure, paragraph 1, a node sends a neighbor advertisement message in response to the Neighbor Solicitations; neighbor advertisement message may contain the duplicative address in the target address field; the node which sent out Neighbor Solicitation may then repeat the process of preparing a new IP address and attempts to register it again as shown in Kitamura figure 3 steps (a) to (j)).

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Kitamura and Borella with the teachings of Narten in order to send a reply message to notify the host whether address duplication has been detected to automatically generate another address and attempt to register it again without human intervention.

28. For claim 39, the claim is rejected for the same rationale as claim 30.

29. Claims 26 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura in view of Borella and further in view of Thomson et al. (IPv6 Stateless

Address Autoconfiguration, <http://www.ietf.org/rfc/rfc2462.txt>, dated December 1998, hereafter Thomson)

30. For claim 26, Kitamura and Borella do not disclose the method is performed by a plurality of different hosts connected on a network if no DNS (Domain Name Server) exists, and wherein the predetermined area is a storage area of the plurality of different hosts.

However, in the art of address auto-configuration, Thomson discloses the method is performed by a plurality of different hosts connected on a network, and wherein the predetermined area is a storage area of the plurality of different hosts (page 7 paragraph 2, 3, and 4, a stateless auto-address configuration wherein neighboring nodes receive a Neighbor Solicitation message containing an address of a host and verify its uniqueness on the link; if the address is not unique, the neighboring node which is using the address will return a Neighbor Advertisement message saying so to the host; if the address is unique, it will be assigned or registered to the host; domain name registration occurs in the same manner since a Neighbor Solicitation and Neighbor Advertisement messages can contain both IP address and domain name according to the analysis of claim 23).

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Kitamura and Borella with the teachings of Thomson in order to implement stateless registration of IP address and domain name for a host (instead of stateful registration with presence of a DNS server in Kitamura's)

in case a site is not particularly concerned with the exact addresses hosts use, so long as they are unique and properly routable (Thomson page 2 paragraph 2); another motivation would be to save on the cost of implementing a DNS server unnecessarily (Thomson page 6 paragraph 3, small sites or plug-and-play nodes do not need a stateful server).

31. For claim 35, Kitamura further discloses: in operation (b), if a DNS exists on a network, the response message is received from the DNS (figure 3 on page 14 steps (j) and (n)). Kitamura and Borella do not disclose if no DNS exists on the network, the response message is received from a plurality of different hosts connected on the network.

However, Thomson discloses if no DNS exists on the network, the response message is received from a plurality of different hosts connected on the network (page 7 paragraph 2, 3, and 4, a stateless auto-address configuration wherein neighboring nodes receive a Neighbor Solicitation message containing an address of a host and verify its uniqueness on the link; if the address is not unique, the neighboring node which is using the address will return a Neighbor Advertisement message saying so to the host; if the address is unique, it will be assigned or registered to the host; domain name registration occurs in the same manner since a Neighbor Solicitation and Neighbor Advertisement messages can contain both IP address and domain name according to the analysis of claim 23).

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Kitamura and Borella with the teachings of Thomson in order to implement stateless registration of IP address and domain name for a host (instead of stateful registration with presence of a DNS server in Kitamura's) in case a site is not particularly concerned with the exact addresses hosts use, so long as they are unique and properly routable (Thomson page 2 paragraph 2); another motivation would be to save on the cost of implementing a DNS server unnecessarily (Thomson page 6 paragraph 3, small sites or plug-and-play nodes do not need a stateful server).

Conclusion

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Ibanez et al. US 2003/0026230. Proxy duplication address detection for dynamic address allocation.
- Gloe. US 2004/0083306. Method and apparatus for maintaining internet domain name data.
- Goto et al. US 2003/0177236. DDNS server, DDNS client terminal, DDNS system.
- Borzilleri et al. US 2004/0103170. Extended domain name method, apparatus and system.

- Tominaga et al. US 2005/0108432. Automatic address management method.
- Asami. US 2005/0086379. DNS server.
- Bhatla. US 2004/0044788. Multiple unicast of data to multiple hosts having the same domain name.
- Nagura et al. US 2003/0126241. Registration agent system.
- Abir. US 2003/0126252. Method and apparatus for dynamic client-side load balancing system.
- Asokan et al. US 2005/0271034. Address acquisition.
- Lim et al. US 2004/0030769. Automaticlly allocating virtual addresses to nodes having the same address.
- Oka et al. US 2004/0039906. Access authorization management system.
- Sawada et al. US 2004/0028061. Address autoconfiguration method for home network.

33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hieu T. Hoang whose telephone number is 571-270-1253. The examiner can normally be reached on Monday-Thursday, 8 a.m.-5 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nabil El-Hady can be reached on 571-272-3963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HH



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